Expert Query Tool

User Guide 2006

June 2006

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Table of Contents

List of Figures

1.0 INTRODUCTION

The Expert Query Tool is a web-based reporting tool using the EPA's WATERS database.

There are just three steps to using Expert Query:

1. View Selection – Choose what type of information you want from the database.
2. Data Element Selection – Choose specific data elements, which will appear as columns in the report, from the database.
3. Entering Search Criteria – Refine the data to be displayed and arrange how it will appear in the report.

Data can be output from Expert Query in two ways: as HTML (displayed in the user's web browser) or as a file (comma– or tab-delimited). Files downloaded to the user's PC can then be imported into a spreadsheet program such as Excel or a database such as Access and manipulated further. To skip directly to examples see section 7.0 of this user's manual.

The internet version of Expert Query is located at http://www.epa.gov/waters/tmdl/expert_query.html. The intranet version of Expert Query, which contains additional views not available to the public, is located at http://intranet.epa.gov/waters/tmdl/expert_query.html.

2.0 STEP 1: VIEW SELECTION

2.1 DESCRIPTION OF DATABASE VIEWS

The data available to Expert Query is organized into views, which are collections of related database columns (i.e.data elements). The views available are displayed on the view selection page (shown in Figure 1) and are grouped into related programs and cross-programs. A description of each view is located in the right column.

Cross-program views depict spatial overlap between entities of two different WATERS programs. It is important to be aware of two situations that can occur when programs are compared to each other in this manner: false negatives, which occur when locational information is missing or not available for all entries, and false positives, which occur when the locational information of one of the entities is either incorrect or not of sufficient quality to determine its exact location. For example, a PCS outfall may discharge onto a particular stretch of impaired water, but the spatial data may be missing from the database, creating a false negative. In another example, due to incomplete or inaccurate latitude/longitude data, a PCS facility may be incorrectly indexed to the National Hydrography Dataset. All cross-program analyses of the location of this PCS outfall against other water features would produce both false positives and false negatives.

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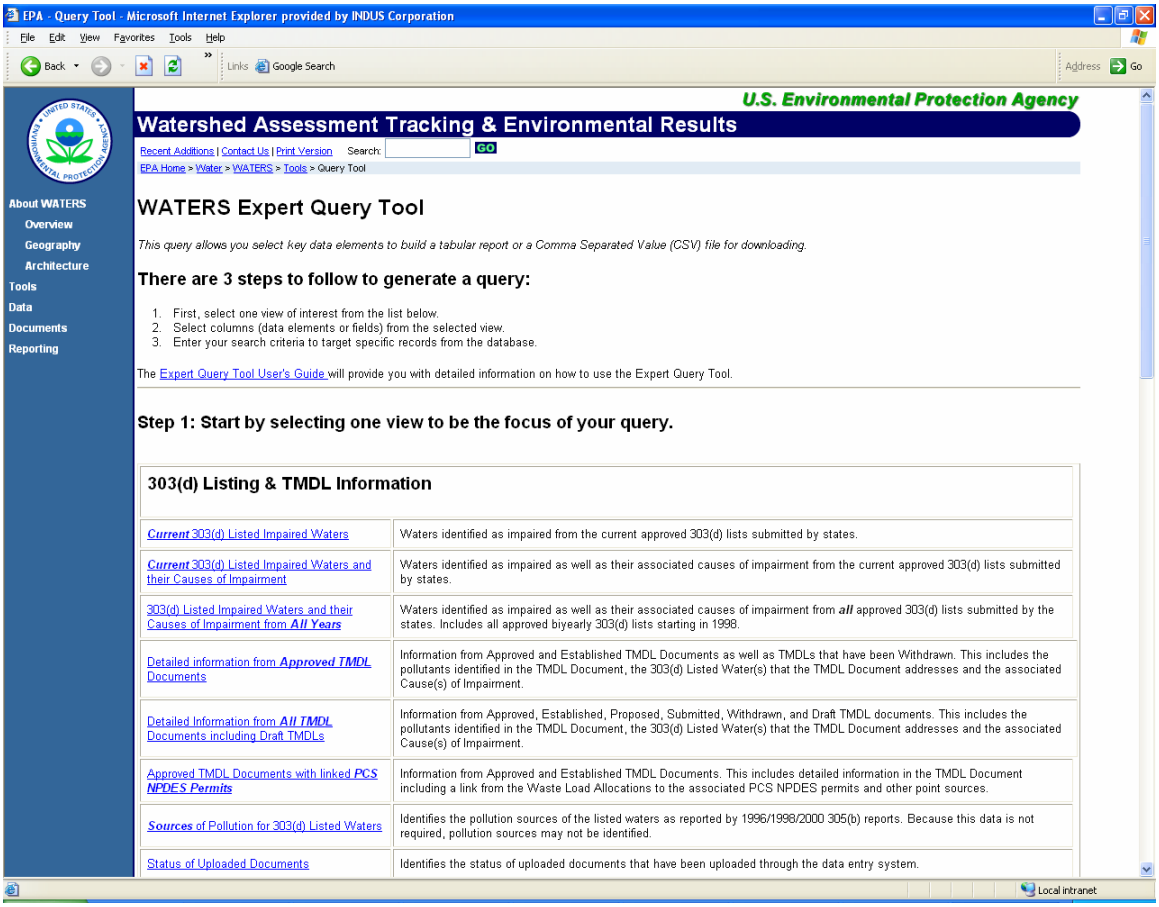


Figure 1 – View Selection

2.2 MAKING A VIEW SELECTION

To select a view for your Expert Query, simply click on the link in the left column. Only one view may be selected.

3.0 STEP 2: DATA ELEMENT SELECTION

3.1 CHOOSING DATA ELEMENTS TO INCLUDE IN THE QUERY

After selecting a view from the View Selection page, the user will be presented with a list of the data elements that make up that view and are available for selection in the report. These database columns, or data elements, which will become the column titles in the report, are presented in rows on this page. In the left column, the data element name as it appears in the database is listed. Beside it, on the right, is a description of what that data element contains in the database.

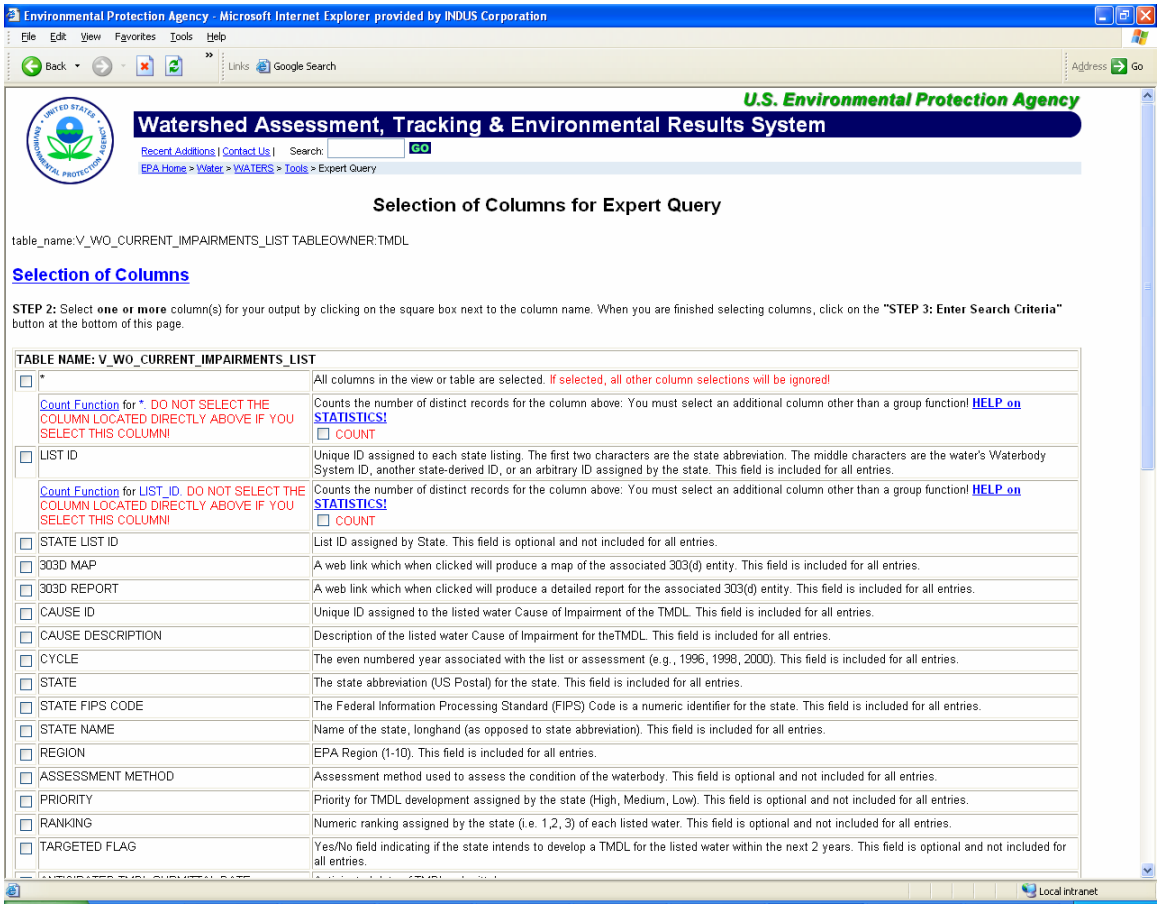


Figure 2 – Data Element Selection

To select data elements, click in the checkbox to the left of each element you'd like to include (see Figure 2). Include data elements you may not necessarily want displayed on the report, but by which you'd like to limit the data.

Shortcut: To select all data elements simultaneously, click the checkbox in the upper left corner marked with an "*", then click the **Step 3: Enter Search Criteria** button at the bottom of the page.

3.2 UNDERSTANDING DISTINCT RECORDS

An important concept to grasp in choosing data elements or "columns" for your query is that of distinct records. Distinct records are defined by the most precise, or "smallest", entity or group of entities included in the view. For example, data elements available for selection in the *Current 303(d) Listed Waters and their Causes of Impairment* view include LIST ID, WATER BODY NAME, CAUSE ID, and CYCLE, among many others. In this view, each distinct record is determined by the combination of LIST ID, and CAUSE ID, i.e. water body segment and pollutant combination. If a query is run in which one of these data elements is not selected, results may not be as precise as expected. On the other hand, it is often useful to lessen the degree of precision in a query by eliminating these data elements in order to get a summary of the data. The total number of distinct records in this database view reflects the total number of listed water

body pollutant combinations across the country and the internet version of this query should match exactly with the total numbers of 303(d) listed causes of impairments presented on the National TMDL website. Similarly, the *Detailed information from **Approved TMDL** Documents* view contains each TMDL as a distinct record. Documents submitted to EPA for approval often contain more than one pollutant and/or more than one water body segment. One TMDL is tallied for each water body segment/pollutant combination addressed in the document.

3.3 NUMERIC FUNCTIONS

Some of the database columns, such as ACRES 303D and MILES 303D, have the ability to have statistical functions performed upon them, such as COUNT, AVERAGE, etc. To select a data element for which you'd like to have a statistical function calculated, click on the appropriate checkbox in the RIGHT column.
Note: Do not select the checkbox in the LEFT column for the same data element name. If you do, you will receive this warning: "You have selected a group function and the individual values that make up the group function in the same query, meaning that the single row value and the group value will be the same. No group function will really be carried out for this case. Please return to the column list on the previous page and select either the group function or the individual number value variable."

Be especially careful with data element selection when including a statistical function because the inclusion of some other data elements may cause unanticipated results. Likewise, including a statistical function for one data element may make the inclusion of another necessary in order to get meaningful results. For example, if you are trying to find the average size of each EPA water body type, you need to include the SIZE UNIT data element in addition to the EPA WATER TYPE data element and the AVERAGE function for the WATER SIZE column, to ensure you generate averages based on the same units (acres, miles, or square miles).

The data elements or "columns" you select along with the statistical function(s) comprise a "group" of records. A group is a collection of data elements by which you would like to see data calculated. In the above example looking for the average size of each EPA water body type, the results are grouped by EPA WATER TYPE and SIZE UNIT, therefore each water type and size unit combination comprise a group, as depicted in Figure 3.

EPA WATER TYPE	SIZE UNIT	AVG(WATER SIZE)
BAY/ESTUARY	SQUARE MILES	14.50
COASTAL	MILES	6.61
GREAT LAKES OPEN WATER	SQUARE MILES	2677.18
GREAT LAKES SHORELINE	MILES	15.73
LAKE/RESERVOIR/POND	ACRES	983.16
OCEAN/NEAR COASTAL	SQUARE MILES	19.20
STREAM/CREEK/RIVER	MILES	5.43
WETLAND	ACRES	5166.35

Figure 3 – Using Statistical Functions and Groups: Results of the Water Body Size by EPA Water Type Query

Some or all of the functions below may be available for numeric data elements in your view. Online help can be viewed in your browser by clicking on the *Help on Statistics!* link just above the relevant checkboxes.

- **COUNT** - This function gives you the total number of individual rows for each unique "group" value. Selecting this gives you a good indication of how many rows resulted from your selection criteria. If all the counts are 1, then you have selected variables that resulted in the group value and the single number value being the same.
- **AVERAGE** - This function gives you the arithmetic mean of the selected statistical variable for each unique "group" value. This is computed by taking sum of the group and dividing it by the number of individual rows in the group. When using Average on an optional field, records with blanks for that field are ignored.
- **SUM** - This function gives you the sum of the selected variable for each unique "group" value. If you selected state, water type and the "Sum Function for Water Size", then a "Water Size Sum" will be reported for each unique combination of state and water type.
- **MAX** - This function gives you the highest value in the group.
- **MIN** - This function gives you the lowest value in the group. It ignores null values.
- **STANDARD DEVIATION** - This function gives you the deviation from the average or the mean. This allows you to determine whether certain row values are out of proportion to the others, giving you an average that is much higher than the mean.
- **VARIANCE** - This function gives you the variance of all values for a group of rows.

3.4 KNOW THE DATA

To get meaningful results, it is important to know the data and how it is stored in the database. For example, many data elements are optional and are therefore incompletely populated, meaning data for that data element may not exist for some records. Other data elements are conditional upon data in other data elements, i.e., they may change from optional to mandatory based on the value of another data element.
Choosing an optional data element and then applying a search condition to it in Step 3 may skew the results.

3.5 ACCEPTING THE DATA ELEMENT (I.E. DATABASE COLUMN) SELECTION

After checking the checkboxes for each data element and/or statistical function you would like to include in your query, click the **Step 3: Enter Search Criteria** button at the bottom of the page.

The following data elements are required, or are derived, in the database and are therefore available where they are included in the 303(d) views available to Expert Query. Definitions of each of the data elements are included in the Data Element Selection page.

CYCLE
EPA ACTION

CAUSE DESCRIPTION	
CAUSE ID	
LIST ID	
NATIONAL SOURCE FLAG	
PARENT CAUSE ID	Derived
PARENT CAUSE DESCRIPTION	Derived
PARENT POLLUTANT DESCRIPTION	Derived
POLLUTANT DESCRIPTION	Derived
POLLUTANT ID	Mandatory for TMDL Data submitted after 2001
REGION	Derived
SOURCE DESCRIPTION	Mandatory in the Sources or Causes of Listed Water Impairments view only
SOURCE ID	Mandatory in the Sources or Causes of Listed Water Impairments view only
STATE	
STATE FIPS CODE	Derived
STATE NAME	Derived
TMDL ID	
TMDL NAME	
TMDL STATUS	Mandatory for TMDL Data submitted after 2001
WATER BODY NAME	
PARENT POL ID	Derived
TMDL END POINT	Mandatory for TMDL Data submitted after 2001
TMDL CAUSE DESCRIPTION	Derived
TMDL CAUSE ID	Mandatory for TMDL Data submitted after 2001
TMDL TYPE	Mandatory for TMDL Data submitted after 2001
WATER BODY NAME	

The following database elements are conditional upon others, derived from conditional elements, or are optional, and therefore not fully populated in the database:

ACRES 303D	Derived if spatial data for the listed water is present
ACTUAL ESTABLISHMENT DATE	Mandatory if TMDL Status is Approved/Established
ANTICIPATED TMDL SUBMITTAL DATE	
ASSESSMENT METHOD	
COMMENTS	
CURRENT TMDL ID	Derived
DAYS TO APPROVE	
DELISTED REASON	
DOCKET NUMBER	
DEVELOPMENT COSTS	
ENDANGERED SPECIES COMMENTS	
ENDANGERED SPECIES	
EPA ADDED	
EPA DELISTED COMMENTS	Mandatory if Delisted Reason is entered
EPA DELISTED DATE	Mandatory if Delisted Reason is entered
EPA ACTION	Mandatory if TMDL Status is Approved/Established
EPA WBTYPE	
EXPLICIT MARGIN OF SAFETY	
FISCAL YEAR DELISTED	Mandatory if Delisted Reason is entered
FISCAL YEAR ESTABLISHED	Derived based on Actual Establishment Date
FIELD COSTS	
GRANT DOLLARS	

IMPLICIT MOS	
LISTING CRITERIA	
LOAD ALLOCATION	If Units or Margin of Safety are entered, either a Total Load Allocation or a Total Waste Load allocation is needed.
LOCATION	
MILES 303D	Derived if spatial data for the listed water is present
NOTICE TO PUBLIC DATE	
NPDES ID	Either NPDES_ID or Other_Non_PCS_Identification is mandatory if TMDL Type is Point Source or Point/Non-Point Source
FTE	
OTHER NON PCS IDENTIFICATION	Either NPDES_ID or Other_Non_PCS_Identification is mandatory if TMDL Type is Point Source or Point/Non-Point Source
PARENT SOURCE DESCRIPTION	Derived
PARENT SOURCE ID	Derived
PRIORITY	
PUBLIC MEETING DATE	
RANKING	
STATE BASIN NAME	
STATE FIPS CODE	Derived
STATE LIST ID	
TARGETED FLAG	
TMDL DOCUMENTS	
TMDL REPORT	Derived
TMDL SUBMITTAL DATE	
TOTAL WASTE LOAD ALLOCATION	If Units or Margin of Safety are entered, either a Total Load Allocation or a Total Waste Load allocation is needed.
UNITS	Mandatory if Total WLA, Total Load Allocation, and/or Explicit Margin of Safety is entered
UNIT DESCRIPTION	Derived
UNLISTED WATERS FLAG	
WASTE LOAD ALLOCATION	Mandatory for all TMDL/NPDES
WITHDRAWN DATE	Mandatory if TMDL Status is Withdrawn
WLA UNITS	Mandatory for all TMDL/NPDES
WLA UNIT DESCRIPTION	Mandatory if WLA_Units is entered
YEAR ESTABLISHED	Derived
YEAR FIRST LISTED	
303D COMMENT	
303D MAP	Derived if spatial data for the listed water is present
303D REPORT	Derived

4.0 STEP 3: ENTER SEARCH CRITERIA

The output selection page, where a user enters search criteria, is displayed as a chart. Clicking any of the column headers takes the user to online help for that particular search option. If no search parameters are set on this page, all records in the database for the

view selected will display, in the order in which they appear in the database (in other words, neither rows nor columns will be ordered in any particular way).

4.1 COLUMN NAME

Under the heading of “Column Name” will be listed the names of the data elements selected in the previous section. Clicking on the name of the data element pops up metadata for that element.

4.2 SEARCH OPTIONS

A drop-down list of comparison operators exists for each data element. Online help on the operators can be obtained by clicking on the *Search Option Help!* column heading. The drop-down list for each data element will only display comparison operators that exist for that data element’s specific data type. The comparison operators available are:

Equal to	The database will only return rows where the column value is equal to the search value.
Not Equal to	The database will only return rows where the column value is NOT equal to the search value.
Beginning with	The database will only return rows where the start of column value is equal to the search value. A comparison is done, character by character, up to the last character entered for the search value. For fields that are stored in upper-case in the database, the case you use here does not matter. However, for fields that are stored in mixed-case, the case you enter here must exactly match that in the database.
Less than/Equal to	The database will only return rows where the column value is equal to or less than the search value.
Greater than/Equal to	The database will only return rows where the column value is equal to or greater than the search value.
Less than	The database will only return rows where the column value is less than the search value.
Greater than	The database will only return rows where the column value is greater than the search value.
Containing	For Character fields only. The database will only return rows where the search value is contained within the column value. As an example if the search value entered is "WOOD" and the column value is "COTTONWOOD RIVER" then the row will be accepted.
In	A very powerful operator for Character fields only. Instead of a single search value, the user can enter multiple search values, each separated by a comma. The database will only return rows where the column value is equal to one of search values. As an example if the search value entered is "GA,AL,KY" and the column value is "AL" then the row will be accepted. Using the same search value of "GA,AL,KY" if the column value was "FL" then the row will be rejected.

Not In	The Opposite of the "In" operator. Instead of a single search value, the user can enter multiple search values, each separated by a comma. The database will only return rows where the column value is not equal to one of search values. As an example if the search value entered is "GA,AL,KY" and the column value is "AL" then the row will be rejected. Using the same search value of "GA,AL,KY" if the column value was "FL" then the row will be accepted.
Between	Instead of a single search value, the user enters a starting and an ending search value, separated by the literal "AND". The database will only return rows where the column value is equal to or greater than the starting search value and less than or equal to the ending search value. As an example if the search value entered is "60085 and 60087" and the column value is "60085" then the row will be accepted. Using the same search value of "60085 and 60087" if the column value was "60088" then the row will be rejected. To aid the user, a pop-up window is displayed which will automatically insert the "AND" literal.

4.3 SEARCH VALUES

If a comparison operator is selected for any column, it will be ignored unless a search value is also entered for the column. Many columns have a search button available to help you enter search criteria. These search buttons are very helpful in ensuring your search criteria match the spelling and format of the data in the database and their use is therefore encouraged, but not necessary. If you use a search button to select more than one search value, the comparison operator will automatically switch to **In**. To use the search buttons, click on the button, then select the appropriate value(s) from the displayed list of options. After making all of your selections, click the **Return Values** button.

If there is no search button available for a column, or if you prefer to enter the criteria manually, be sure to use correct formatting. For example, dates must be entered in *MON-DD-YYYY* format. If you are using the **In** or **Not In** operators, values must be separated by commas. The keyword “AND” must separate two distinct values when using the **Between** operator. Finally, make sure your spelling matches that in the database. The following data elements are case-sensitive, which means if you include search criteria for them, the case must exactly match what is in the database. For all other data elements, the case in which you enter your search criteria does not matter.

Assessment Method
Comments
Delisted Reason
EPA Delisted Comments
List ID
Listing Criteria
Method Description
Other Non-PCS Identification
Size Unit
State List ID
Targeted Flag
TMDL End Point

TMDL Type
Use Description

4.4 COLUMN DISPLAY ORDER

The column display order controls the order in which the columns are displayed from left to right in the report. It has no bearing on the sort order of the columns. If no display order is dictated, the columns will appear in the order in which they appear on the Search Criteria page. To choose a display order, enter a "1" in the field for the column you'd like to appear first, on the far left of the report, a "2" for the second column, a "3" for the third column, etc. The display order can be partially selected by filling in an order for only a few columns; any columns not included in the enumeration will appear in an order determined by the database, following any that have been specifically ordered. See Figure 4.

4.5 SORT COLUMN

The sort column determines the order by which the columns are sorted. For example, if you have included both REGION and STATE in your selection and you'd like to sort the results first by REGION and then by STATE within the regional groupings, place a "1" in the Region Sort Column and a "2" in the State Sort Column. Like the Display Order, you may partially select the sort order by entering sort order numbers for only some of the columns. See Figure 4.

4.6 SORT ORDER

The sort order is changed via a drop-down box from which you can choose Ascending (low to high) or Descending (high to low). The default is Ascending.

4.7 HIDE FROM RESULTS

Click this checkbox if the column in question is used to refine the results, but you don't want it displayed on the report. Hide from Results can only be used if Search Values have been entered for the column in question. In Figure 4, results will be limited to Region 3, however, the REGION column, which is now superfluous since it would display "3" for every single entry, will not appear in the report. Values selected for Column Display Order or Sort Column are ignored if Hide from Results is chosen.

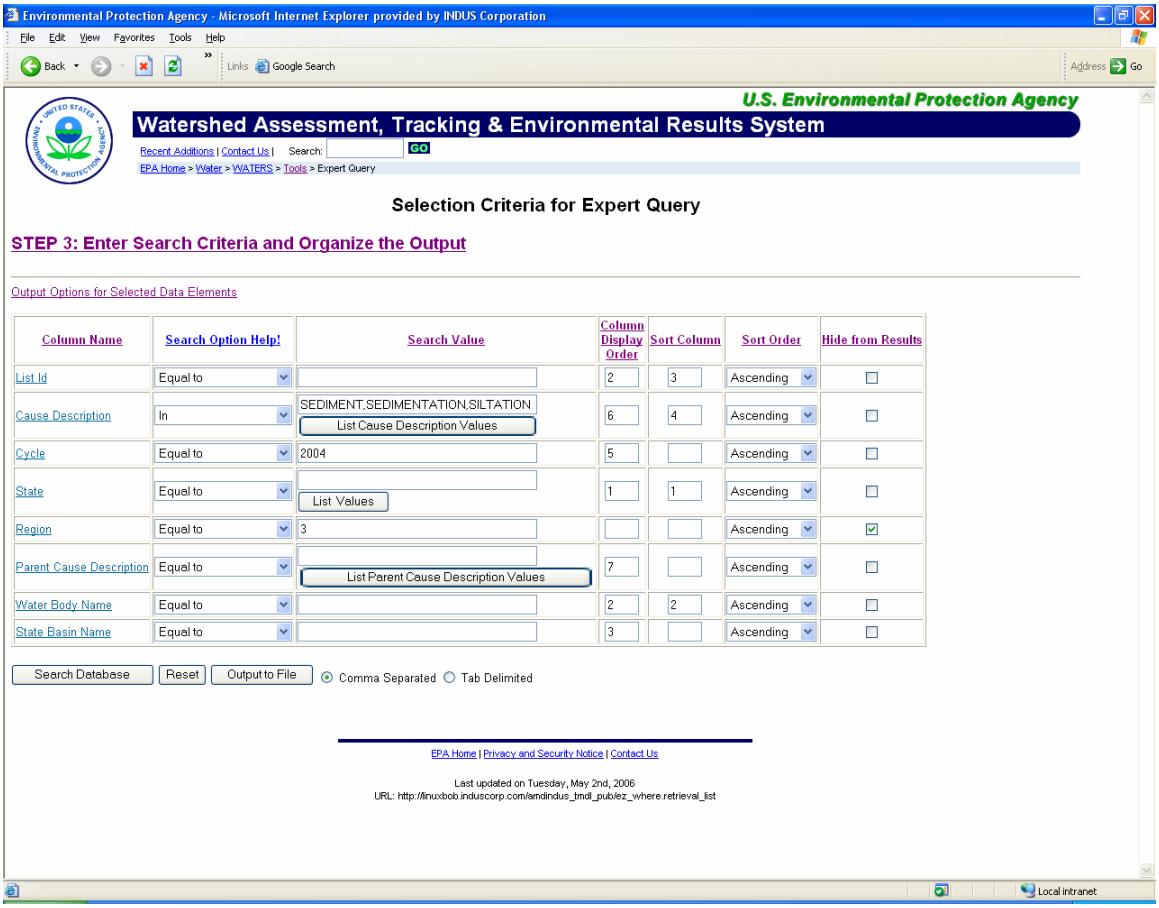


Figure 4 – Entering Search Criteria

4.8 RUNNING THE QUERY

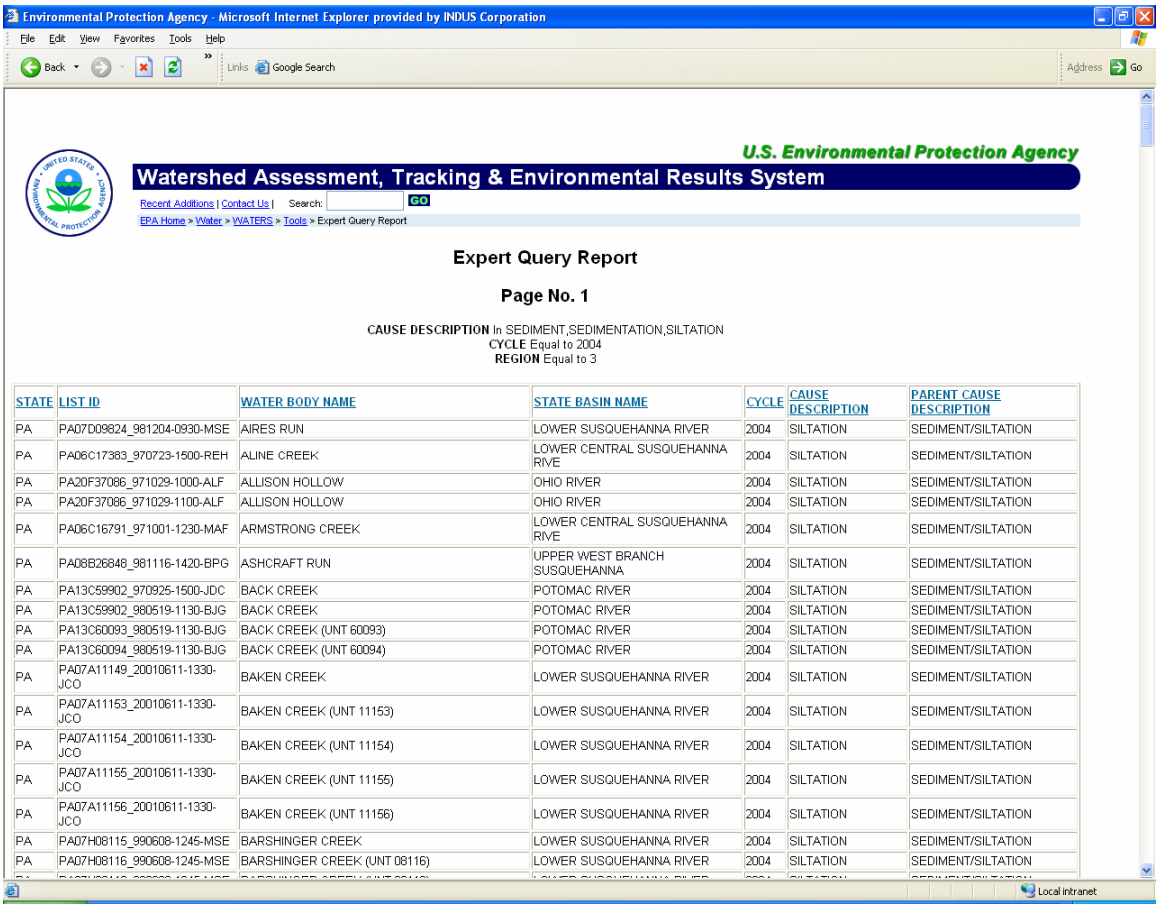
Three buttons are located on the bottom of the Selection Criteria page:

- **Search Database –** Displays results as HTML in browser. The option to download as a file is also available from the resulting web page.
- **Reset** – Clears all values on the page.
- **Output to File –** Creates a comma-separated or tab-delimited file for downloading and importing into Excel or Access. See the **Downloading Files** section for further information.

Click either the **Search Database** or **Output to File** button to view your report.

5.0 VIEWING THE REPORT

5.1 HTML REPORT



STATE	LIST ID	WATER BODY NAME	STATE BASIN NAME	CYCLE	CAUSE DESCRIPTION	PARENT CAUSE DESCRIPTION
PA	PA07D09824_981204-0930-MSE	AIRES RUN	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA06C17383_970723-1500-REH	ALINE CREEK	LOWER CENTRAL SUSQUEHANNA RIVE	2004	SILTATION	SEDIMENT/SILTATION
PA	PA20F37086_971029-1000-ALF	ALLISON HOLLOW	OHIO RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA20F37086_971029-1100-ALF	ALLISON HOLLOW	OHIO RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA06C16791_971001-1230-MAF	ARMSTRONG CREEK	LOWER CENTRAL SUSQUEHANNA RIVE	2004	SILTATION	SEDIMENT/SILTATION
PA	PA08B26848_981116-1420-BPG	ASHCRAFT RUN	UPPER WEST BRANCH SUSQUEHANNA	2004	SILTATION	SEDIMENT/SILTATION
PA	PA13C59902_970925-1500-JDC	BACK CREEK	POTOMAC RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA13C59902_980519-1130-BJG	BACK CREEK	POTOMAC RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA13C60093_980519-1130-BJG	BACK CREEK (UNT 60093)	POTOMAC RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA13C60094_980519-1130-BJG	BACK CREEK (UNT 60094)	POTOMAC RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07A11149_20010611-1330-JCO	BAKEN CREEK	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07A11153_20010611-1330-JCO	BAKEN CREEK (UNT 11153)	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07A11154_20010611-1330-JCO	BAKEN CREEK (UNT 11154)	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07A11155_20010611-1330-JCO	BAKEN CREEK (UNT 11155)	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07A11156_20010611-1330-JCO	BAKEN CREEK (UNT 11156)	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07H08115_990608-1245-MSE	BARSHINGER CREEK	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION
PA	PA07H08116_990608-1245-MSE	BARSHINGER CREEK (UNT 08116)	LOWER SUSQUEHANNA RIVER	2004	SILTATION	SEDIMENT/SILTATION

Figure 5 – HTML Report

When an HTML report is displayed in a web browser, the user may click on any column heading to see metadata for that column in a pop-up window. Additionally, data elements that include links (for example, to reports or maps) open in a new window.

Records are limited to 500 to a page in order to prevent browsers from crashing. If a report contains more than 500 recorders, a **Next 500 Records** button appears at the bottom of the screen. Click this button to navigate through the records.

A “Number of Records” sum, which describes the number of rows returned by your query, also appears at the bottom of the screen. It may seem natural to associate the Number of Records with the statistical function COUNT, but this is often not the case and this line of thinking should be avoided. The COUNT function returns the number of rows in the database (i.e. distinct records in the database). If you need a count of distinct records, review the **Numeric Functions** section of **Data Element Selection** and re-work your query, making sure to select the COUNT function in your search parameters.

For queries that use the COUNT function, a **TOTAL** appears at the bottom of the report that provides a sum, or a total count of, of that column. The TOTAL only appears for queries that return 500 records or fewer.

Also at the bottom of the HTML report is an **Output to File** button and related comma-separated/tab-delimited radio buttons. See the **Downloading Files** section for information pertaining to this option.

6.0 DOWNLOADING FILES

Before selecting the **Output to File** button from either the Selection Criteria screen or the HTML report screen, ensure the file format you prefer is selected. The default is comma-separated. If you are unsure which format to use, leave the comma-separated radio button selected.

Some columns are automatically omitted from the report when it is converted to a downloadable file format, for example, links to maps and reports. This is because the use of some characters in those columns interferes with delimitation and causes errors when importing the file into a spreadsheet or database.

Once the **Output to File** button has been clicked, a web page containing a link to the file is generated. The link is a filename composed of a random string of numbers. Depending on how their computer is set up, users of Internet Explorer may be able to automatically open the link in Excel by clicking on it. It is best, however, to download the file by right-clicking on the link and choosing “Save Target As” (or “Save Link As” in Firefox) and then selecting a location, and optionally a new name, for the file. Then follow the instructions below to open the file in Excel or Access. Reports with more than 65,000 rows should be opened with Access or another database program because Excel is unable to handle files that large.

6.1 OPENING FILES IN EXCEL

6.1.1 Comma-Separated Value Files (CSV)

1. After saving the comma-separated file, open Excel.
2. From the *File* menu, choose *Open*.
3. Browse for the downloaded file and select it. Make sure the *Files of Type* drop-down is set to “All Files (*.*)” or “Text Files (*.prn, *.txt, *.csv)”.
4. Click **Open.** The report should automatically appear in the active worksheet, ready to be manipulated in any way you’d like.

6.1.2 Tab-Delimited Files

1. After saving the tab-delimited file, open Excel.
2. From the *File* menu, choose *Open*.
3. Browse for the download file and select it. Make sure the *Files of Type* drop-down is set to “All Files (*.*)”.
4. Click **Open**. The Text Import Wizard window opens.

5. Select the *Delimited* radio button under *Original Data Type*. Click **Next**.
6. Check *Tab* under *Delimiters*. Make sure the *Text Qualifier* is set to '"'. Click **Next**.
7. If necessary or desired, select each column in the *Data Preview Pane* and change the *Column Data Format*. Click **Finish**.
8. The report should automatically appear in the active worksheet, ready to be manipulated in any way you'd like.

6.2 OPENING FILES IN ACCESS

1. After saving the comma-separated or tab-delimited file, open Access and either open an existing database or create a new one.
2. From the *File* menu, choose *Get External Data* → *Import*.
3. Browse for the downloaded file and select it. Make sure the Files of Type drop-down is set to "Text Files (*.txt, *.csv, *.tab,*.asc)".
4. The Text Import Wizard opens. Accept the default of "Delimited" for the file type and click **Next**.
5. Select either *Tab* or *Comma* for the delimiter based on the type of file you downloaded. Check the box for *First Row Contains Field Names*. Choose '"' for the *Text Qualifier*. Click **Next**.
6. Accept the default *In a New Table* to store your data unless you would like to add it to an existing table. Click **Next**.
7. Click on each column in the display panel in turn and edit the column heading if necessary, select the appropriate data type, and optionally decide if you'd like the column to be indexed. Click **Next**.
8. Determine if you would like to create a primary key and make the appropriate selection. Click **Next**.
9. Enter a name for the table. Click **Finish**.
10. A table containing your report has been created and you are now free to run further queries against it.

7.0 EXAMPLES

This section will describe how to run a few example queries.

7.1 COMMON LISTED WATERS QUERIES

7.1.1 What are all the current 303(d) listed waters and specific causes of impairment under the parent cause of impairment of Pathogens by state in Region 2?

Step 1: Choose the ***Current*** *303(d) Listed Waters and their Causes of Impairment* view.

Step 2: Select LIST ID, CAUSE DESCRIPTION, CYCLE, STATE, REGION, PARENT CAUSE DESCRIPTION, and WATER BODY NAME. Optionally select other columns of interest, such as STATE BASIN NAME. Click **Step 3: Enter Search Criteria** button.

Step 3: Enter the following search criteria, as depicted in Figure 6:

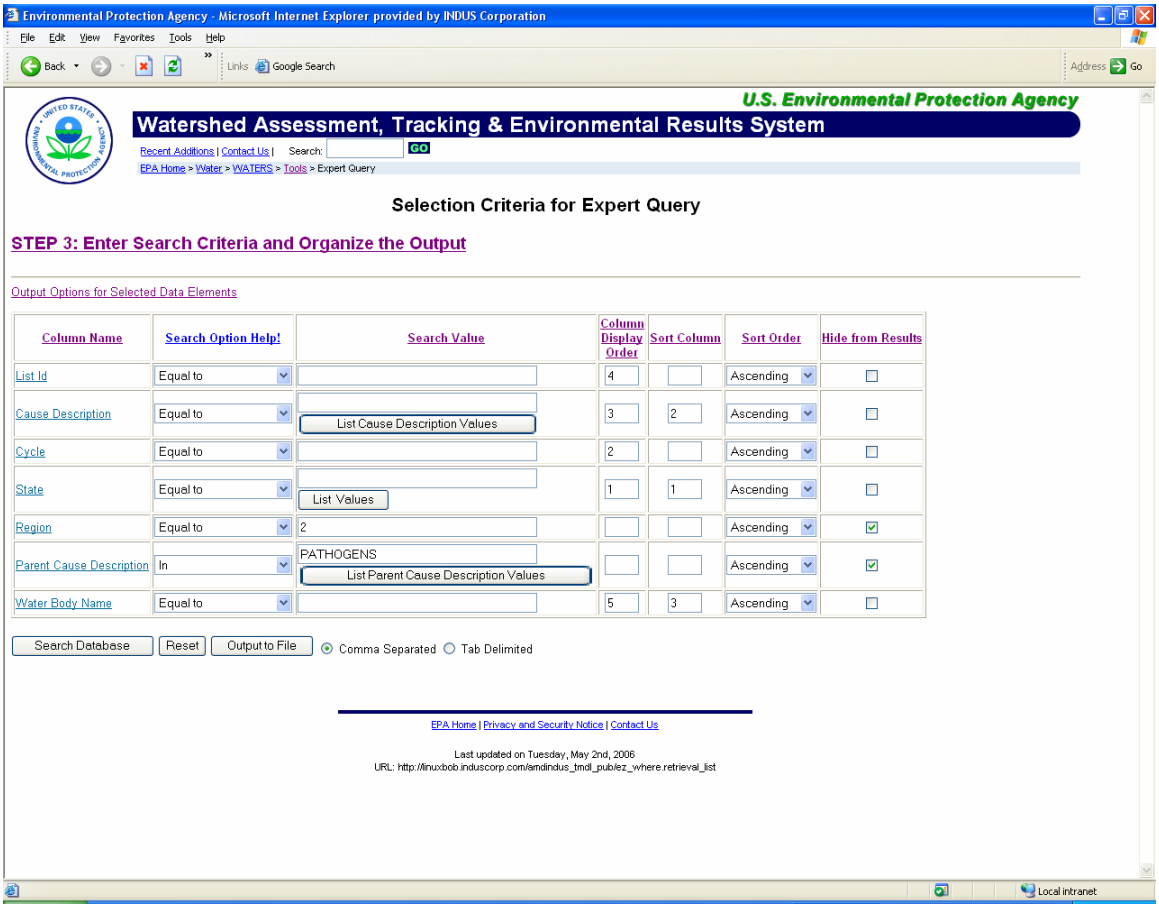


Figure 6 – Entering Search Criteria for a Detailed Listing of Current Impaired Waters and Specific Causes of Impairment

- Enter "2" for *Search Value* for REGION. Check the *Hide from Results* box for REGION to hide it from display in the report.
- Click the **List Parent Cause Description Values** button in the *Search Value* for PARENT CAUSE DESCRIPTION. In the pop-up, find and select the checkbox for "Pathogens", then click the **Return Values** button. Check the *Hide from Results* box for PARENT CAUSE DESCRIPTION to hide it from display in the report.

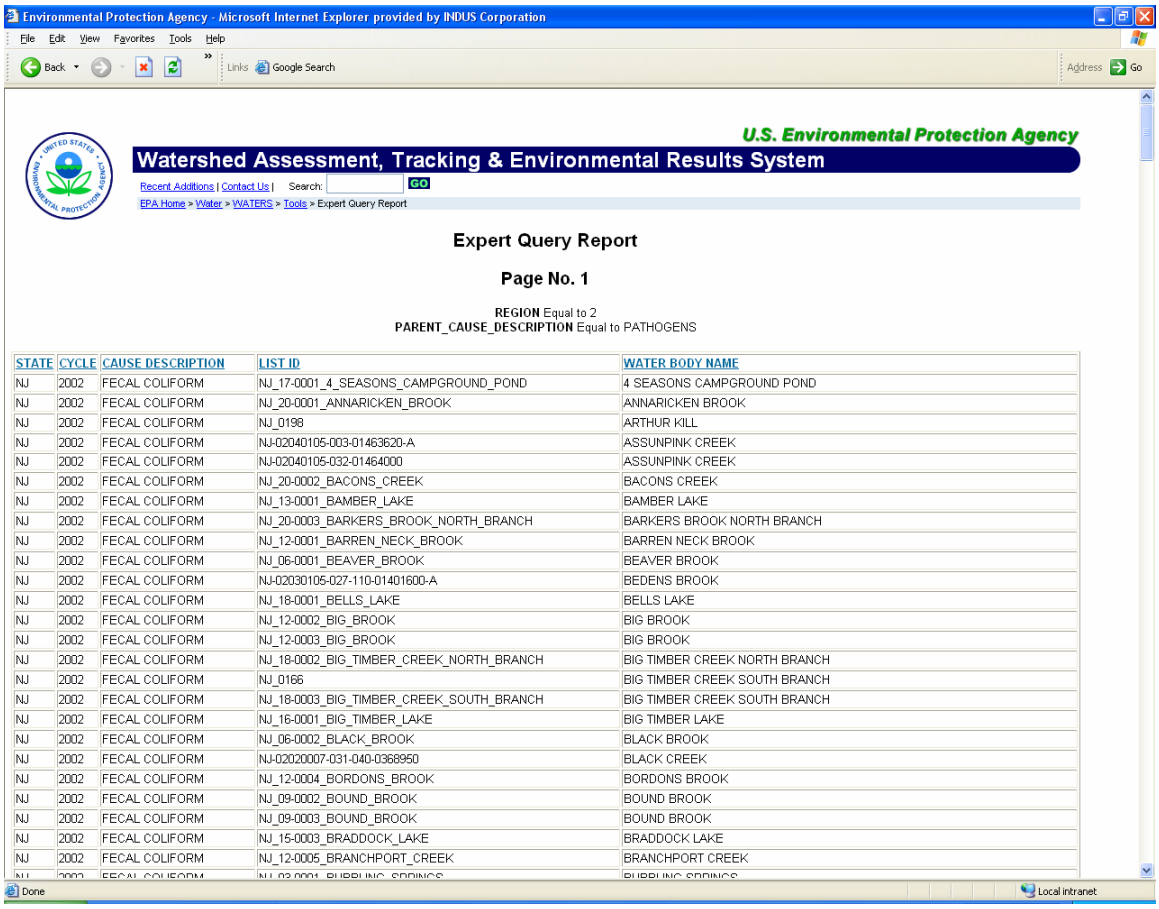
Note: Pathogens is both a parent cause of impairment category that encompasses many different causes of impairment and an individual cause of impairment. Ensure that you select the level of specificity (cause or parent cause) that you seek.

- Use the following number pattern for *Column Display Order*:
    1. STATE
    2. CYCLE
    3. CAUSE DESCRIPTION
    4. LIST ID
    5. WATER BODY NAME

  REGION and PARENT CAUSE DESCRIPTION do not get display order numbers because they are "Hide from Results" columns.

- Use the following number pattern for *Sort Column Order*:
    1. STATE
    2. CAUSE DESCRIPTION
    3. WATER BODY NAME

  The un-numbered columns will be sorted naturally by the database.
- Click the **Search Database** button. Results are displayed in Figure 7.



STATE	CYCLE	CAUSE DESCRIPTION	LIST ID	WATER BODY NAME
NJ	2002	FECAL COLIFORM	NJ_17-0001_4_SEASONS_CAMPGROUND_POND	4 SEASONS CAMPGROUND POND
NJ	2002	FECAL COLIFORM	NJ_20-0001_ANNARICKEN_BROOK	ANNARICKEN BROOK
NJ	2002	FECAL COLIFORM	NJ_0198	ARTHUR KILL
NJ	2002	FECAL COLIFORM	NJ-02040105-003-01463620-A	ASSUNPINK CREEK
NJ	2002	FECAL COLIFORM	NJ-02040105-032-01464000	ASSUNPINK CREEK
NJ	2002	FECAL COLIFORM	NJ_20-0002_BACONS_CREEK	BACONS CREEK
NJ	2002	FECAL COLIFORM	NJ_13-0001_BAMBER_LAKE	BAMBER LAKE
NJ	2002	FECAL COLIFORM	NJ_20-0003_BARKERS_BROOK_NORTH_BRANCH	BARKERS BROOK NORTH BRANCH
NJ	2002	FECAL COLIFORM	NJ_12-0001_BARREN_NECK_BROOK	BARREN NECK BROOK
NJ	2002	FECAL COLIFORM	NJ_06-0001_BEAVER_BROOK	BEAVER BROOK
NJ	2002	FECAL COLIFORM	NJ-02030105-027-110-01401600-A	BEDENS BROOK
NJ	2002	FECAL COLIFORM	NJ_18-0001_BELLS_LAKE	BELLS LAKE
NJ	2002	FECAL COLIFORM	NJ_12-0002_BIG_BROOK	BIG BROOK
NJ	2002	FECAL COLIFORM	NJ_12-0003_BIG_BROOK	BIG BROOK
NJ	2002	FECAL COLIFORM	NJ_18-0002_BIG_TIMBER_CREEK_NORTH_BRANCH	BIG TIMBER CREEK NORTH BRANCH
NJ	2002	FECAL COLIFORM	NJ_0166	BIG TIMBER CREEK SOUTH BRANCH
NJ	2002	FECAL COLIFORM	NJ_18-0003_BIG_TIMBER_CREEK_SOUTH_BRANCH	BIG TIMBER CREEK SOUTH BRANCH
NJ	2002	FECAL COLIFORM	NJ_16-0001_BIG_TIMBER_LAKE	BIG TIMBER LAKE
NJ	2002	FECAL COLIFORM	NJ_06-0002_BLACK_BROOK	BLACK BROOK
NJ	2002	FECAL COLIFORM	NJ-02020007-031-040-0368950	BLACK CREEK
NJ	2002	FECAL COLIFORM	NJ_12-0004_BORDONS_BROOK	BORDONS BROOK
NJ	2002	FECAL COLIFORM	NJ_09-0002_BOUND_BROOK	BOUND BROOK
NJ	2002	FECAL COLIFORM	NJ_09-0003_BOUND_BROOK	BOUND BROOK
NJ	2002	FECAL COLIFORM	NJ_15-0003_BRADDOCK_LAKE	BRADDOCK LAKE
NJ	2002	FECAL COLIFORM	NJ_12-0005_BRANCHPORT_CREEK	BRANCHPORT CREEK

Figure 7 - Detailed Listing of Current Impaired Waters and Specific Cause of Impairments

7.1.2 How many waters are currently on the 303(d) list for each specific cause of impairment under the parent category of Pathogens in the states in Region 2?

Unlike the previous example that generated results with individual information about each listed water, this example will explain how to generate summary results.

Step 1: Choose the ***Current*** *303(d) Listed Waters and their Causes of Impairment* view.
Step 2: Select the COUNT function for LIST ID (from the right column), CAUSE DESCRIPTION, CYCLE, STATE, REGION, and PARENT CAUSE DESCRIPTION. Click **Step 3: Enter Search Criteria** button.
Note: If you select the LIST ID button in the left column, the search will return each individual List ID and the COUNT function for that column will return 1 for each

entry instead of a summary. Also, do not select any columns that are at the water body level, i.e., WATER BODY NAME, STATE BASIN NAME, and LOCATION if you would like to generate a summary.

Step 3: Enter the following search criteria:

- Enter "2" for *Search Value* for REGION. Check the *Hide from Results* box for REGION to hide it from display in the report.
- Click the **List Parent Cause Description Values** button in the *Search Value* for PARENT CAUSE DESCRIPTION. In the pop-up, find and select the checkbox for "Pathogens", then click the **Return Values** button. Check the *Hide from Results* box for PARENT CAUSE DESCRIPTION to hide it from display in the report.
- Use the following number pattern for *Column Display Order*:
    1. STATE
    2. CYCLE
    3. CAUSE DESCRIPTION
    4. LIST ID

  REGION and PARENT CAUSE DESCRIPTION do not get display order numbers because they are "Hide from Results" columns.
- Use the following number pattern for *Sort Column Order*:
    1. STATE
    2. CAUSE DESCRIPTION

  The un-numbered columns will be sorted naturally by the database.
- Click the **Search Database** button. Results are displayed in Figure 8.

STATE	CYCLE	CAUSE DESCRIPTION	COUNT(LIST ID)
NJ	2002	FECAL COLIFORM	298
NJ	2002	PATHOGENS	61
NY	2002	PATHOGENS	98
PR	2002	ENTEROCOCCUS BACTERIA	2
PR	2002	FECAL COLIFORM	54
PR	2002	PATHOGENS	1
VI	2002	FECAL COLIFORM	7
TOTALS			**521**

Figure 8 – Count of Current Impaired Waters and Specific Cause of Impairment

7.2 COMMON TMDL QUERIES

7.2.1 What are all approved TMDLs by fiscal year for Region 10 for all pollutants beginning with the word "Fecal"?

Step 1: Choose the *Detailed information from **Approved TMDL** Documents* view.

Step 2: Select TMDL ID, TMDL NAME, STATE, REGION, TMDL FISCAL YEAR, POLLUTANT DESCRIPTION, TMDL TYPE, LIST ID, WATER BODY

NAME, CYCLE, and TMDL DOCUMENTS. Click **Step 3: Enter Search Criteria** button.

Step 3: Enter the following search criteria, as depicted in Figure 9:

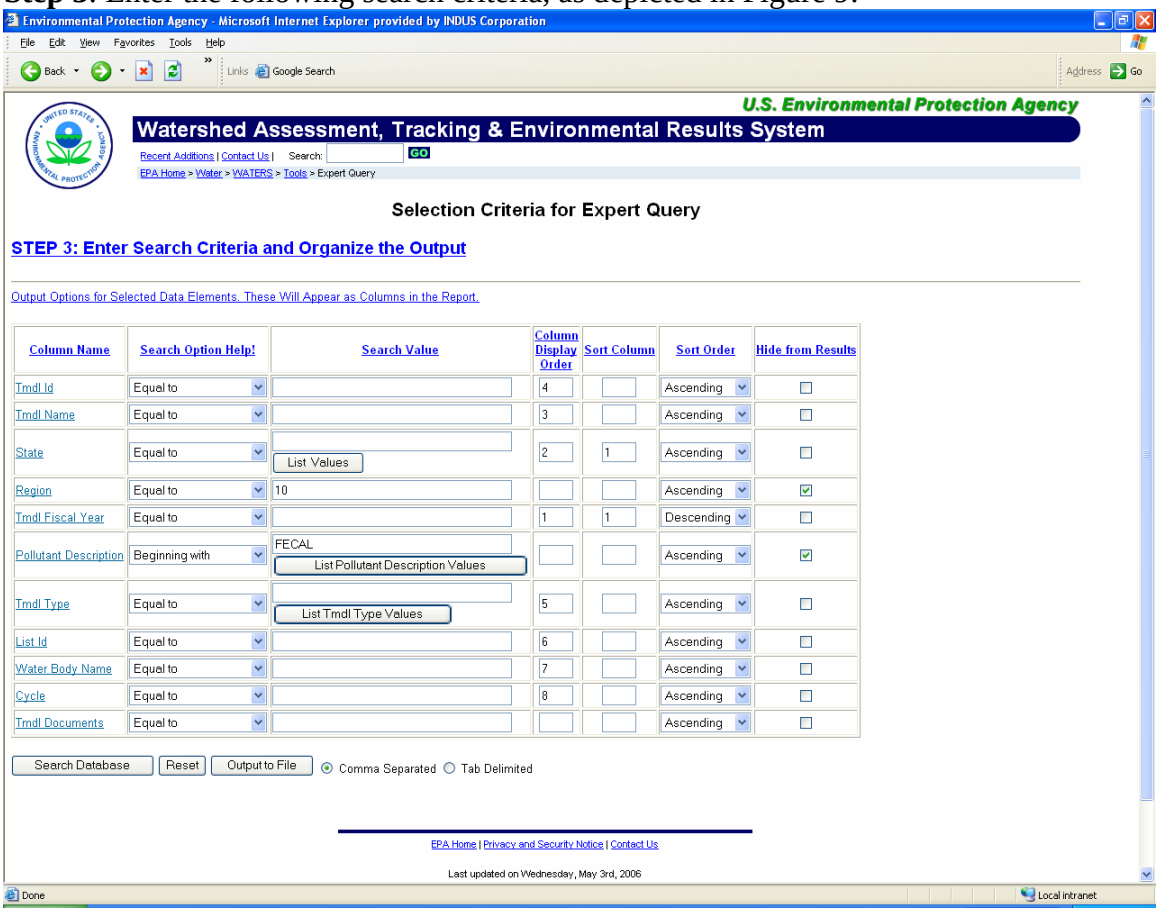


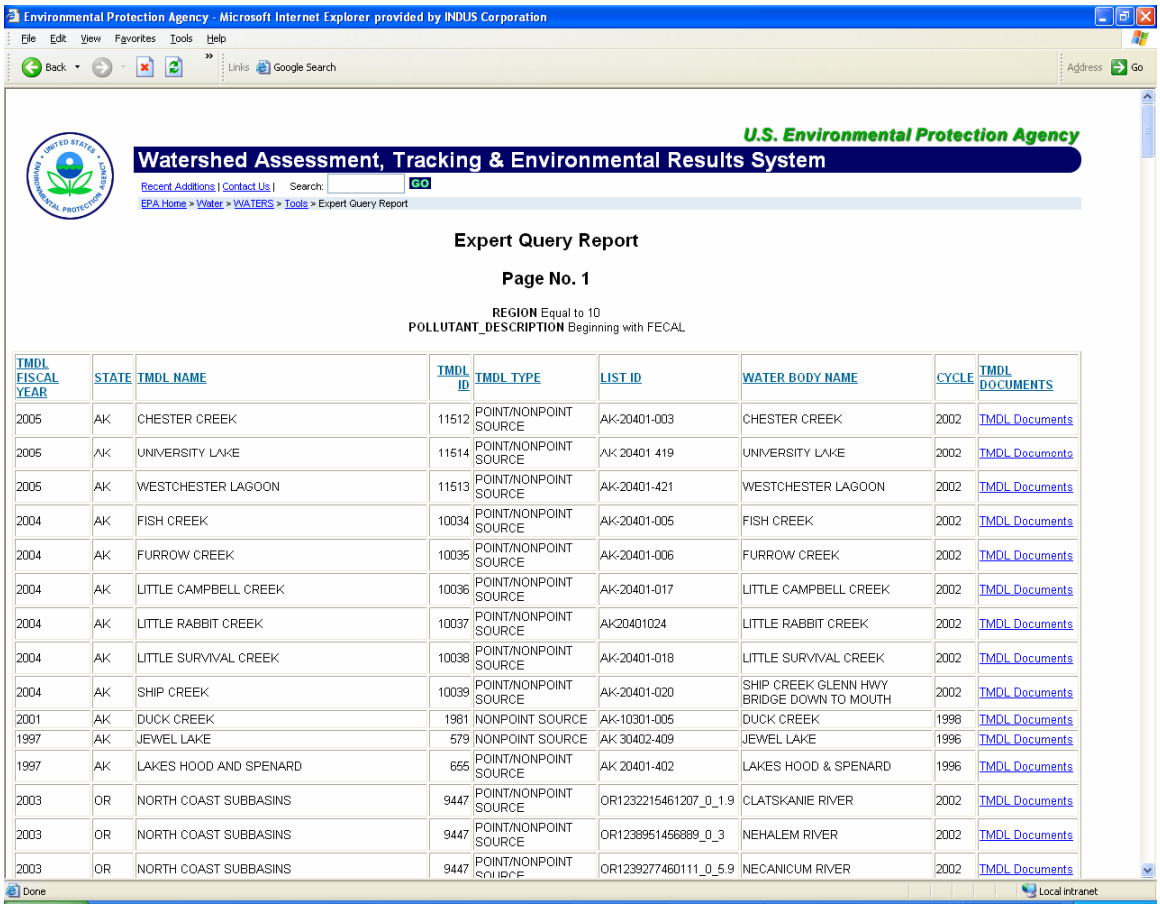
Figure 9 – Entering Search Criteria for TMDLs by Fiscal Year

- Enter "10" for the REGION *Search Value*. Check the REGION *Hide from Results* box to prevent it from displaying in the report.
- Choose "Beginning With" from the POLLUTANT DESCRIPTION *Search Option* drop-down box. Enter "Fecal" for the POLLUTANT DESCRIPTION *Search Value*.
- Use the following number pattern for *Column Display Order*:
    1. FISCAL YEAR ESTABLISHED
    2. STATE
    3. TMDL NAME
    4. TMDL ID
    5. TMDL TYPE
    6. LIST ID
    7. WATER BODY NAME
    8. CYCLES LISTED

  REGION and POLLUTANT DESCRIPTION do not get display order numbers because they are "Hide from Results" columns.

- Use the following number pattern for *Sort Column Order*:
    1. FISCAL YEAR ESTABLISHED
    2. STATE

  The un-numbered columns will be sorted naturally by the database.
- Choose "Descending" for the FISCAL YEAR ESTABLISHED *Sort Order*.
- Click the **Search Database** button. Results are displayed in Figure 10.



TMDL FISCAL YEAR	STATE	TMDL NAME	TMDL ID	TMDL TYPE	LIST ID	WATER BODY NAME	CYCLE	TMDL DOCUMENTS
2005	AK	CHESTER CREEK	11512	POINT/NONPOINT SOURCE	AK-20401-003	CHESTER CREEK	2002	TMDL Documents
2005	AK	UNIVERSITY LAKE	11514	POINT/NONPOINT SOURCE	AK 20401 419	UNIVERSITY LAKE	2002	TMDL Documents
2005	AK	WESTCHESTER LAGOON	11513	POINT/NONPOINT SOURCE	AK-20401-421	WESTCHESTER LAGOON	2002	TMDL Documents
2004	AK	FISH CREEK	10034	POINT/NONPOINT SOURCE	AK-20401-005	FISH CREEK	2002	TMDL Documents
2004	AK	FURROW CREEK	10035	POINT/NONPOINT SOURCE	AK-20401-006	FURROW CREEK	2002	TMDL Documents
2004	AK	LITTLE CAMPBELL CREEK	10036	POINT/NONPOINT SOURCE	AK-20401-017	LITTLE CAMPBELL CREEK	2002	TMDL Documents
2004	AK	LITTLE RABBIT CREEK	10037	POINT/NONPOINT SOURCE	AK20401024	LITTLE RABBIT CREEK	2002	TMDL Documents
2004	AK	LITTLE SURVIVAL CREEK	10038	POINT/NONPOINT SOURCE	AK-20401-018	LITTLE SURVIVAL CREEK	2002	TMDL Documents
2004	AK	SHIP CREEK	10039	POINT/NONPOINT SOURCE	AK-20401-020	SHIP CREEK GLENN HWY BRIDGE DOWN TO MOUTH	2002	TMDL Documents
2001	AK	DUCK CREEK	1981	NONPOINT SOURCE	AK-10301-005	DUCK CREEK	1998	TMDL Documents
1997	AK	JEWEL LAKE	579	NONPOINT SOURCE	AK 30402-409	JEWEL LAKE	1996	TMDL Documents
1997	AK	LAKES HOOD AND SPENARD	655	POINT/NONPOINT SOURCE	AK 20401-402	LAKES HOOD & SPENARD	1996	TMDL Documents
2003	OR	NORTH COAST SUBBASINS	9447	POINT/NONPOINT SOURCE	OR1232215461207_0_1.9	CLATSKANIE RIVER	2002	TMDL Documents
2003	OR	NORTH COAST SUBBASINS	9447	POINT/NONPOINT SOURCE	OR1238951456889_0_3	NEHALEM RIVER	2002	TMDL Documents
2003	OR	NORTH COAST SUBBASINS	9447	POINT/NONPOINT SOURCE	OR1239277460111_0_5.9	NECANICUM RIVER	2002	TMDL Documents

Figure 10 –Detailed Listing of TMDLs by Fiscal Year

7.2.2 How many approved TMDLs by fiscal year for Region 10 are there for all pollutants beginning with the word "Fecal"?

Unlike the previous example that generated results with individual information about each TMDL, this example will explain how to generate summary results.

Step 1: Choose the *Detailed information from **Approved TMDL** Documents* view.
Step 2: Select the COUNT function for TMDL_ID (from the right column), STATE, REGION, TMDL FISCAL YEAR and POLLUTANT DESCRIPTION. Click **Step 3: Enter Search Criteria** button.
Notes: If you select the TMDL ID button in the left column, the search will return each individual TMDL ID and the COUNT function for that column will return "1" for each entry instead of a summary. Additionally, do not select any columns that are

at the TMDL or water body level, i.e., TMDL NAME, TMDL STATUS, or WATER BODY NAME if you would like to generate a summary.

Step 3: Enter the following search criteria, as depicted in Figure 11:

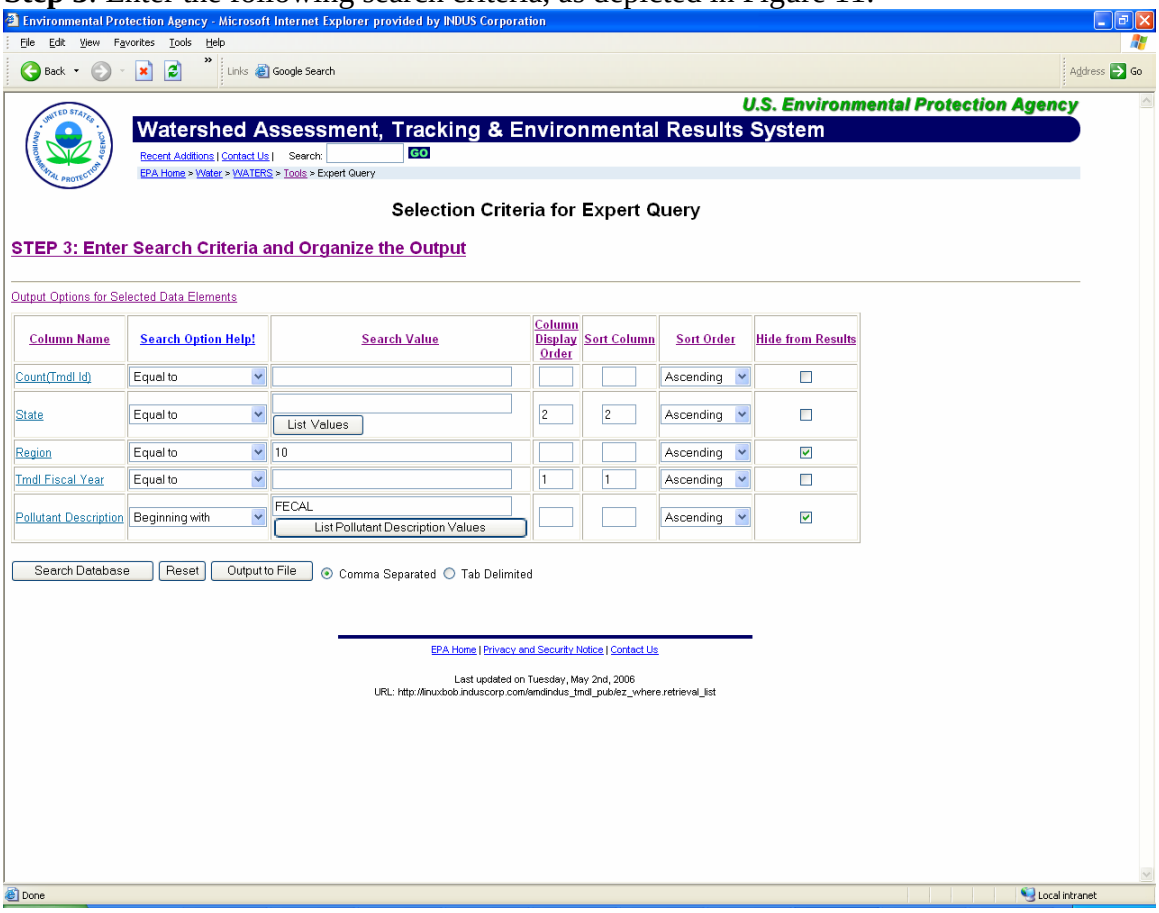


Figure 11 –Entering Search Criteria for TMDL Counts by Fiscal Year

- Enter "10" for *Search Value* for REGION. Check the *Hide from Results* box for REGION to hide it from display in the report.
- Choose "Beginning With" from the POLLUTANT DESCRIPTION *Search Option* drop-down box. Enter "Fecal" for the POLLUTANT DESCRIPTION *Search Value*.
- Use the following number pattern for *Column Display Order*:
    1. TMDL FISCAL YEAR
    2. STATE

  REGION and PARENT CAUSE DESCRIPTION do not get display order numbers because they are "Hide from Results" columns.
- Use the following number pattern for *Sort Column Order*:
    1. TMDL FISCAL YEAR
    2. STATE

  The un-numbered columns will be sorted naturally by the database.
- Click the **Search Database** button. Results are shown in Figure 12.

TMDL FISCAL YEAR	STATE	COUNT(TMDL ID)
1993	WA	3
1996	WA	1
1997	AK	2
1997	WA	1
1999	WA	1
2000	WA	4
2001	AK	1
2001	WA	2
2002	WA	6
2003	OR	1
2003	WA	3
2004	AK	6
2004	WA	3
2005	AK	3
2005	WA	7
TOTALS		**44**

Figure 12 - TMDL Counts by Fiscal Year